MONITOR WELL PRE-SPUD PROPOSAL

1) WELL NAME/NUMBER: BW-1

2) PROPOSED LOCATION: (a) General (on or off-site) On-site
(attach map) Site Area West boundary (400)
(b) Sect 35 Twnshp 20S Rng 3E NW ¼ NW ¼ SW ¼

3) WELL PARAMETERS:
(a) Est. total depth 210 (ft) (b) Est. ground elevation ~~4760~~ 4770 ft
(c) Anticipated stratigraphy:
Alluvium from 0 ' to 200 ' (depth)
Andesite (Orejon) from 200 ' to TD ' (depth)
_____ from _____ ' to _____ ' (depth)
(d) Anticipated water bearing horizon(s):
Alluvium at 140 - 200 ' (depth)
_____ at _____ ' (depth)
(e) Anticipated static water level 140 ' (depth)

4) WELL PURPOSE/JUSTIFICATION (attach maps and table if needed):
Point of exposure monitor well at WSTF western boundary. Well is the first of seven to be installed along this boundary. Well will be completed at the water table to characterize the uppermost portion of the aquifer. Borehole will be drilled to bedrock to tie in seismic data and determine the thickness of saturated alluvium.

5) PROPOSED DRILLING PARAMETERS:
(a) Drilling method(s): (air/foam/mud rotary/auger/etc.)
Mud Rotary ' from 0 ' to 40 ' (depth)
Air-Foam Rotary ' from 40 ' to TD ' (depth)
_____ ' from _____ ' to _____ ' (depth)

Air-foam method: "Quik-Foam" surfactant/water mixture used in conjunction with filtered compress air.

Mud-rotary method: Bentonite mud/water mixture.

(b) Lithology sampling - collect sample every:

5' intervals Method Grab from 0 ' to TD (depth)

Core type 6" Dennison from 140 ' to 145 ' (depth)*

2" Christiansen from _____ ' to _____ ' (depth)

2" Christiansen from _____ ' to _____ ' (depth)

* core saturated alluvium near completion zone.

(c) Drilling rig type: Franks rotary rig for surface casing / Chicago Pneumatic rotary rig to TD

(d) Anticipated drilling additive(s): None

Water source NASA Quality checked by GC (method)

(e) Decontamination/Quality Assurance:

Clean equipment by steam (method) prior to every well

Clean tools by steam (method) prior to every well

Other QA procedures Air filtering/monitoring, periodic steam cleaning of tools/sampling equipment when necessary

(f) Drilling company: Larjon Drilling

address: P.O. Box 925, Las Cruces, New Mexico 88047

Company representative: Larry Johnson Phone 505-526-8672

6) PROPOSED BOREHOLE GEOPHYSICS

(a) Survey type: GR - Neutron from 0 ' to TD (depth)

Survey type: GR-Den-Res-Cal from 0 ' to TD (depth)

Survey type: 16"-40" E-Log from W.L. ' to TD (depth)

(b) Geophysical company: Southwest Survey

address: 4200 Skyline Drive, Farmington, NM 87401

Company representative: Don Pearson Phone 505-325-8531

7) PROPOSED WELL COMPLETION DESIGN/MATERIALS

(a)

Casing:	Material	Diameter	From	To	Comments
Temporary					
Surface	steel	8"	0	40' est	
Blank (riser)	stainless +	4"	0	+3'	
Screen (20')	stainless ++	4"	135'	155'	0.02"
Completion Pipe	stainless +	4"	120'	135'	
	PVC-Sch 40**	4"	0	120'	
Silt trap	stainless +	4"	to 5' below screen		
Protective Cap	stainless +	4"	on top with lock		

** for shallow completions

\+ Type 304, Schedule 5 stainless steel

++ Regular strength screen

(b) Filter pack:

	Primary	Secondary
Material type	Prewashed sand	Prewashed sand
Grain Size	8/20 grade	16/40 grade
Est. length (thick)	30 feet	2-3' above & below 8/20

(c) Seal - Upper: Bentonite Thickness 5 feet above upper 16/40 sand

Lower: Bentonite Thickness 5 feet below lower 16/40 sand

(d) Grout - Material 5% Bentonite cement from above completion zone to the surface

(e) Borehole - Bentonite plug from 200' (anticipated alluvium/bedrock contact) to TD.

8) PROPOSED WELL DEVELOPMENT

(a) Development method Surge and pump

Equipment Pulling unit with bailer & submersible pump

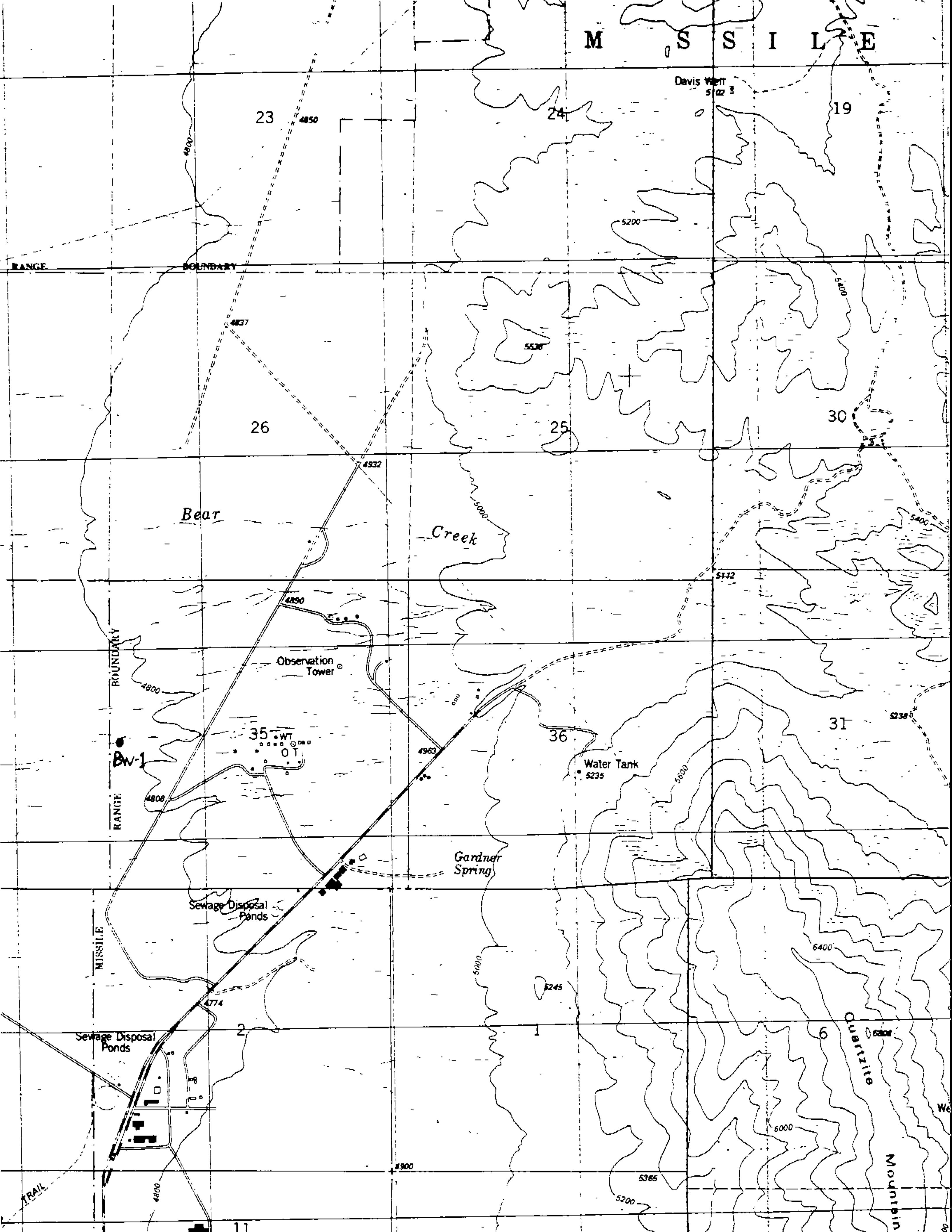
(b) Anticipated flow rate 5-15 gpm Duration until adequately devel.

(c) Company providing service Larjon

9) WELL AUTHORIZATION

(a) Proposed by Geoscience Consultants, Ltd.

(b) Authorized Robert Mitchell (name) NASA (representing) Robert C Mitchell (signature) 13 July 88



M S S I L E
Davis Well
5102
23
24
19
4850
4800
5200
RANGE BOUNDARY
4837
5536
5400
26
25
30
4932
5000
Bear Creek
5400
5112
4890
Observation Tower
RANGE BOUNDARY
4800
35 WT
OT
4963
36
31
5238
Bw-1
4808
Water Tank
5235
5600
Gardner Spring
Sewage Disposal Ponds
MISSILE
6400
5000
5245
4774
Sewage Disposal Ponds
2
1
6
Quartzite Mountain
6000
4900
5365
5200
TRAIL
4800
11